

CHAPTER 3

GRITS/STAT DATABASE MODULE

3.1 INTRODUCTION

Ground water data may be entered, edited and deleted in the **GRITS Database** module. **GRITS/STAT** is a relational database system and the data entry interface differs from traditional off-the-shelf packages. This chapter walks you through all data entry chores and explains the affects they have on the **GRITS/STAT** database files. A basic understanding of the **GRITS/STAT** database files goes a long way toward preventing confusion and lost data.

Note: Ground water data may also be added, edited and deleted in the **GRITS SAGE** module. The **GRITS Database** and **GRITS SAGE** modules operate on the same set of files. Modifications made in **GRITS Database** will automatically show up in **GRITS SAGE** and vice-versa.

3.1.1 GRITS/STAT DATABASE FILES

Unlike most commercially available software packages, **GRITS/STAT** does not save data in single files. **GRITS/STAT** separates ground water data into a set of five database files. Ground water data for a given facility is physically stored in the five database files shown below in Table 3-1.

Database File	Description
FACILITY.DBF	Facility specific information (i.e., Facility Name, Address and Contact information)
SAMPLING.DBF	List of Sampling events for each Facility in FACILITY.DBF
PARAMS.DBF	List of Monitored parameters for each Facility in FACILITY.DBF.
WELLS.DBF	List of Monitoring Wells for each Facility in FACILITY.DBF.
GWDATA.DBF	Ground water observations.

Table 3-1. The five database files used by **GRITS/STAT** to store ground water information. (For information on the individual data elements used in **GRITS/STAT**, see Appendix A)

Each data directory contains the five files listed in Table 3-1. The data within the five files will, of course, vary from data directory to data directory. If data for a particular facility or group of facilities needs to be sent to another **GRITS/STAT** user, all five database files listed in Table 3-1 should be sent.

A partial set of ground water data for a fictitious landfill is shown as it might appear on a summary report in Figure 3-2. Figure 3-3 shows how the same data is stored in the five **GRITS/STAT** database files listed in Table 3-1.

Ground water DATA FOR ABC LandFill FCID: ABCLANDFILL Highway 12 Oakville, TN 12431						
Well: MW-1 (Upgradient)						
CONSTITUENT				SAMPLE DATES		
EPA Method	Parameter	Units	Detection Limit	01-01-96	02-01-96	03-01-96
VOLATILE ORGANICS						
8240	Acetone	ppb	10.0	<10.0	<10.0	15.0
8240	Benzene	ppb	5.0	<5.0	7.5	22.0
8240	Carbon tetrachloride	ppb	5.0	<5.0	<5.0	12.0
...
TOTAL METALS						
7060	Arsenic, Total	ppb	10.0	<10.0	<10.0	<10.0
7131	Cadmium, Total	ppb	5.0	<5.0	<5.0	<5.0
7421	Lead, total	ppb	5.0	<5.0	7.5	15.6
...
Well: MW-2 (Downgradient)						
CONSTITUENT				SAMPLE DATES		
EPA Method	Parameter	Units	Detection Limit	01-01-96	02-01-96	03-01-96
VOLATILE ORGANICS						
8240	Acetone	ppb	10.0	<10.0	17.2	21.4
8240	Benzene	ppb	5.0	8.2	10.5	25.2
8240	Carbon tetrachloride	ppb	5.0	<5.0	8.0	13.6
...
TOTAL METALS						

7060	Arsenic, total	ppb	10.0	<10.0	<10.0	12.4
7131	Cadmium, total	ppb	5.0	<5.0	<5.0	7.2
7421	Lead, total	ppb	5.0	7.6	11.5	25.4

Figure 3-2. Ground water data for two wells, three sampling dates and six parameters for ABC Landfill.

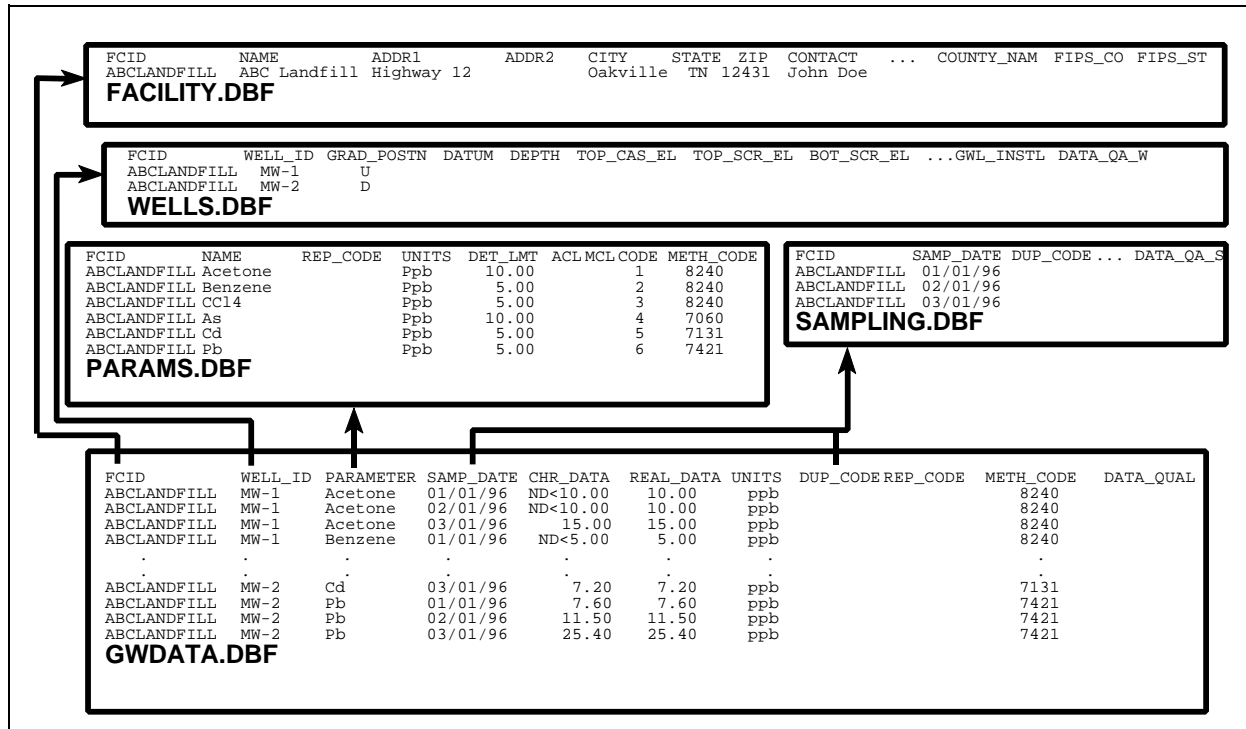


Figure 3-3. ground water data from the sample report in Figure 3-2 as it is stored in the GRITS/STAT database files.

The ground water observations are stored in GWDATA.DBF. Each row or record in GWDATA.DBF holds one ground water observation. Each ground water observation is stamped with four key identifiers:

FCID	Unique 12 character identifier for the Facility that the ground water observation came from.
WELL_ID	Eight character identifier for the well that the observation came from. WELL_ID should be unique within a given Facility.
PARAMETER	Unique eight character identifier for the parameter being measured.

SAMP_DATE, DUP_CODE	The combination of SAMP_DATE and DUP_CODE identifies a unique sampling event within a given Facility. (Note that DUP_CODE is often left blank).
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Detailed information about each Facility is stored in FACILITY.DBF and is referenced by the Facility ID or FCID. Details about each well are stored in WELLS.DBF and are referenced by a combination of FCID and WELL_ID. Details about each sampling event are stored in SAMPLING.DBF and are referenced by a combination of FCID, SAMP_DATE (sampling date) and DUP_CODE (duplicate code). Details about each parameter being monitored are stored in PARAMS.DBF and are referenced by a combination of FCID, NAME (parameter code) and REP_CODE (replicate code). Storing the details in separate files prevents **GRITS/STAT** from having to redundantly stamp each ground water observation record in GWDATA.DBF with details such as the full Facility Mailing Address or the date that the monitoring well was installed. This results in a significant savings in hard disk space. This relational database scheme also leads to a good deal of flexibility in data reporting and analysis. The four spreadsheet screens in **GRITS SAGE** are done with the same code. The row and column databases are simply changed for each spreadsheet screen (i.e., the Well, Date by Parameter spreadsheet uses WELLS.DBF and SAMPLING.DBF records for each row and the PARAMS.DBF records for each column, the Parameter, Date by Well spreadsheet uses the PARAMS.DBF and the SAMPLING.DBF records for each row and the WELLS.DBF records for each column. Each cell in the spreadsheet corresponds to the record in GWDATA.DBF with matching keys.)

The links that bind the database files together are index files. These files will have an .NTX extension. Healthy index files are crucial to the proper execution of **GRITS/STAT**. To this end the developers of **GRITS/STAT** have provided the Index/Pack File option in **GRITS Utilities** and the Cleanup Databases... option in **GRITS SAGE** to rebuild all index files from scratch.

Since every record in each of the five **GRITS/STAT** databases is stamped with a FCID (Facility ID), more than one Facility may be stored in one set of database files. While the **GRITS/STAT** system will accommodate storage of multiple facilities within a single set of database files, it may be advantageous to create separate directories for individual facilities or groups of facilities. This will mainly depend upon the data management needs of the user. In deciding on an appropriate data management plan, the user should consider at least the following:

- *Number of facilities to be maintained*
- *Expected number of parameters, wells, and sampling dates*
- *Availability of hard-disk space*
- *Reporting requirements*
- *Data transfer needs*
- *Data backup equipment (e.g. floppy disk, tape backup, etc.)*

3.1.2 MAKING CHANGES TO GRITS/STAT DATABASES OUTSIDE OF GRITS/STAT

The **GRITS/STAT** databases are Clipper® databases. With a one byte exception, Clipper® databases are essentially industry standard dBase III+ .DBF files. The index files (the files with the .NTX extension) may be only used by Clipper® programs or programs utilizing special programming libraries. While commercially available programs such as Microsoft® Excel can easily open any **GRITS/STAT** database file, they do not open or maintain the accompanying index files and they do not make proper entries in related database files. This means that any changes made to **GRITS/STAT** files will always result in out-of-date index files and out-of-synch database files. This results in unpredictable behavior in **GRITS/STAT**. It is *strongly* recommended that off-the-shelf programs, such as Microsoft® Excel, should only be used for preparing ASCII files for importing data into **GRITS/STAT** or analyzing data exported from **GRITS/STAT**. **GRITS Database** and **GRITS SAGE** automatically maintain all index files and related database files.

3.2 STARTING GRITS DATABASE

Follow the steps below to launch the **GRITS Database** module.

1. Start **GRITS/STAT 5.0**. (See Section 2.4)
2. Use the up and down arrow keys to highlight the **GRITS Database** option from the **GRITS Main Menu** and press <Enter>. The **GRITS Database** module should appear on your screen as shown in Figure 3-4.

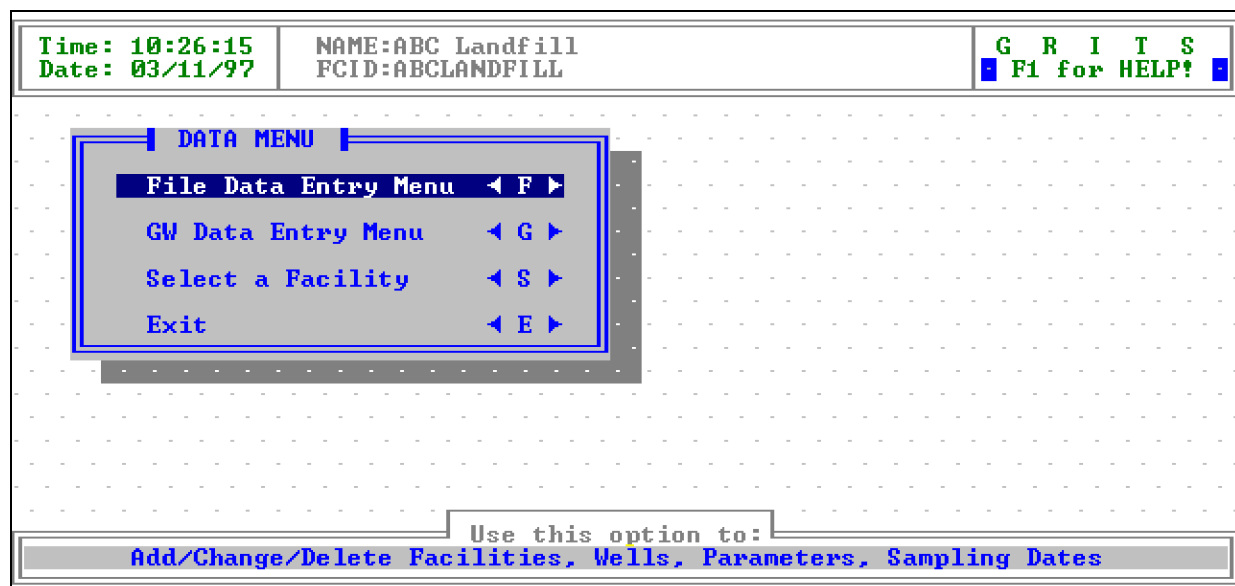


Figure 3-4. The GRITS Database module.

3.3 SELECTING A DATA DIRECTORY

Prior to beginning a data entry session you should check the currently selected facility and data directory. **GRITS/STAT** only allows you to work on one Facility at a time. The currently selected facility is displayed at the top of the **GRITS Database** screen as shown in Figure 3-5. If the currently selected facility is not the facility that you wish to work with follow the instructions below. If you need to create a new data directory follow the instructions in section 2.5.



Figure 3-5. The currently selected Facility is the ABC Landfill.

1. Use the up and down arrow keys to highlight the Select a Facility option of the DATA MENU and press <Enter>. A pop-up list of all facilities in the currently selected data directory appears on your screen as shown in Figure 3-6.

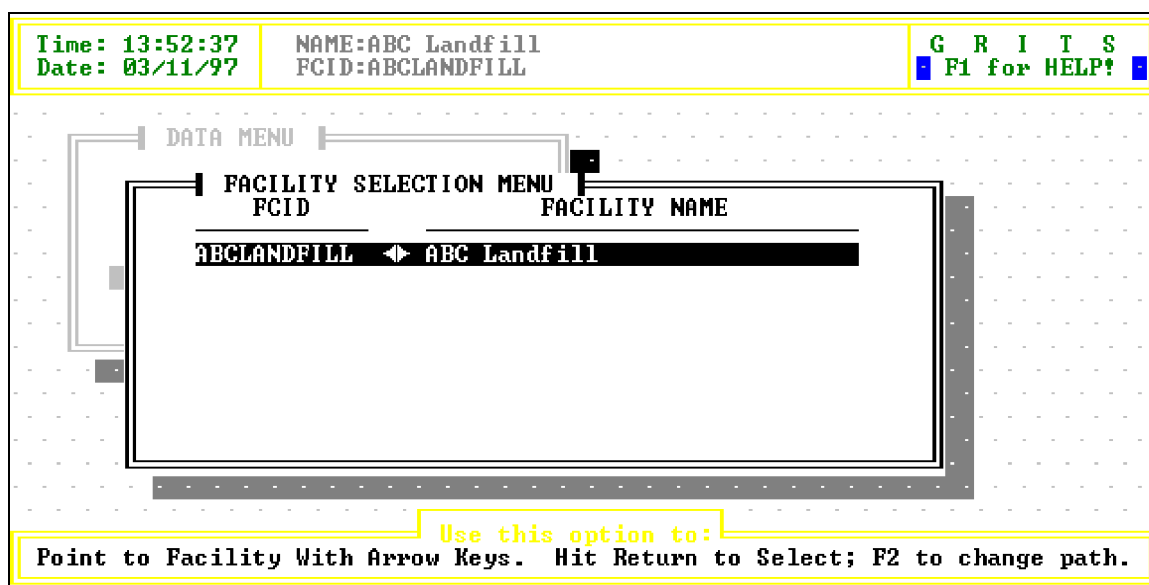


Figure 3-6. The FACILITY SELECTION MENU. In this case there is data for only one facility in the currently selected data directory.

2. If the desired facility appears in the pop-up list use the up and down arrow keys to highlight the facility and press <Enter>.

If the desired facility does not appear in the list it is in another data directory. To switch to another data directory press <F2>. A dialog will appear on your screen and prompt you for the Source Path as shown in Figure 3-7. Type the legal DOS

directory name of your data directory and press <Enter>. If a valid data directory has been specified the **FACILITY SELECTION MENU** will reappear and display all facilities in the newly selected data directory.



Figure 3-7. The Source path dialog. In this case the data directory is being changed to the D:\GRITS500\SEMINAR5 directory.

NOTE: This procedure sets the current data directory for all **GRITS/STAT** modules except **GRITS SAGE**.

All adds, edits and deletes performed in **GRITS Database** will be applied to the five database files listed in table 3-1 located in the currently selected data directory.

3.4 FILE DATA ENTRY MENU

The File Data Entry Menu option of the **DATA MENU** contains menu options for adding, editing and deleting Facility, Well, Parameter and Sampling Event Data. If modifications to the ground water observations need to be made use the **GW Data Entry Menu** option of the **DATA MENU**.

To access the File Data Entry Menu use the up and down arrow keys and highlight the File Data Entry Menu option of the **DATA MENU** and press <Enter>. You may also access the File Data Entry Menu by pressing <F> at the **DATA MENU**. The File Data Entry Menu is shown in Figure 3-8.

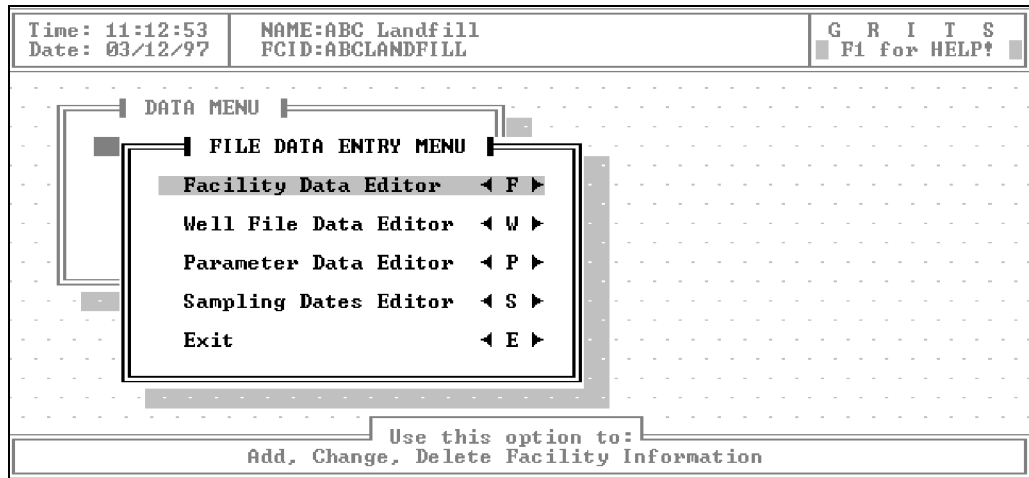


Figure 3-8. The FILE DATA ENTRY MENU.

3.4.1 FACILITY DATA EDITOR

The first option in the FILE DATA ENTRY MENU is the Facility Data Editor. The Facility Data Editor option is used to add a new facility, edit an existing facility or delete an existing facility.

To get to the Facility Data Editor options press <F> at the FILE DATA ENTRY MENU or use the up and down arrow keys to highlight the Facility Data Editor and press <Enter>. The EDIT FACILITY MENU as shown in Figure 3-9 should appear on your screen.

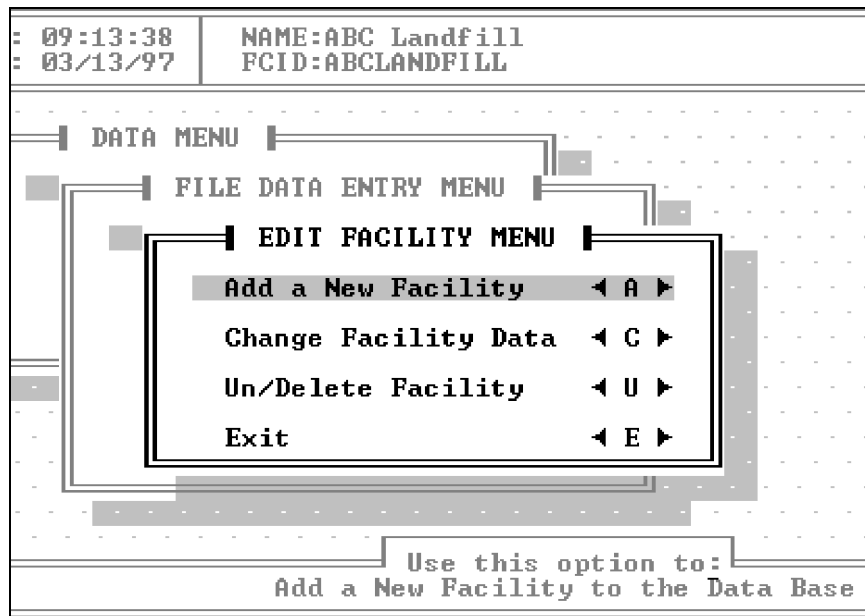


Figure 3-9. The EDIT FACILITY MENU.

3.4.1.1 ADD A NEW FACILITY

The Add a New Facility option of the EDIT FACILITY MENU is used to start a new ground water dataset in the currently selected data directory.

Note: If you wish to create a new data directory and start a new facility use the Create Skeletons option of the UTILITIES MENU in the **GRITS Utilities** module.

The Add a New Facility option is the first step in beginning a new ground water dataset. Since all well, sampling event and parameter data are stamped with a Facility ID (FCID), a Facility entry must be made before wells, sampling events or parameters can be entered.

Since each ground water observation is stamped with a Well ID, a Parameter ID and a Sample Date, wells, parameters and sample dates must be entered prior to entering ground water observations.

To add a new facility to the currently selected database follow the steps below.

1. Press <A> at the EDIT FACILITY MENU or use the up and down arrow keys and highlight the Add a New Facility option and press <Enter>. A dialog appears and prompts you for the FCID for your new facility. The FCID is a unique 12 character identifier for your new facility.



Figure 3-10. Prompt for the FCID of your new facility.

The FCID is the standard, unique RCRA facility identification code. If this is not a RCRA facility, you may enter other standard codes that will uniquely identify the facility (for this reason, facility name is not recommended).

Type the FCID of your new facility and press <Enter>. The ADD A NEW FACILITY dialog as shown in Figure 3-11 appears on your screen.

Time: 14:22:11 Date: 03/13/97	NAME: ABC Landfill FCID: ABCCLANDFILL	G R I T S F1 for HELP!
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ADD A FACILITY

Site Name: XXXXXXXXXXXXXXXXXXXX

Address: XXXXXXXXXXXXXXXXXXXX State: XX

City: XXXXXXXXXXXX ZIP: XXXXXX

FCID: TN0000000002

County: XXXXXXXXXX
 FIPS ST: XXXXXX FIPS CO: XXXXXX

Contact: XXXXXXXXXXXX Phone Num: () -

Section: XXXX Latitude: 00° 0' 0.0000

Township: XXXX Longitude: 00° 0' 0.0000

Range: XXXX Lat/Long Method: +

Use this option to:
 ↑ Enter New Facility Data Above ↑ (Enter County Last)

Figure 3-11. The ADD A FACILITY dialog for a fictitious facility with an FCID of TN0000000002.

2. Complete the entries in the ADD A FACILITY dialog. Use the up and down arrow keys to navigate between entries.

Note that you cannot move into the fields for County, FIPS ST and FIPS CO. These entries will be filled from a pop-up County selection list. If the State entry is left blank the County selection box will not appear.

Press **<Page Down>** when you have completed all desired entries.

Table 3-2 lists describes each entry in the ADD A FACILITY dialog.

ADD A FACILITY dialog entry	Description	Example
Site Name	Enter the name of the facility. If this is a permitted facility, use the name on the permit or permit.	XYZ Landfill
Address	Enter the street address, P.O. Box and/or route where the facility is located. Enter the precise location. DO NOT enter the corporate headquarters or mailing address or office addresses unless it is the same location. "NW corner of Cline and Route 30" is better than "Route 30."	NW corner of Cline and Route 30
City	Enter the city the facility is located. Corporate headquarters or office addresses which are different from the facility location should not be used.	Estill Springs

15State	Enter the state where the facility is located. Corporate headquarters or office addresses which are different from the facility location should not be used.	TN
ZIP	Enter the facility's zip code.	37339
County	The County that the facility is located in will be selected from a pop-up list along with FIPS ST and FIPS CO after the <Page Down> key is pressed.	Franklin
FIPS ST	The FIPS ST code is auto-filled when the County is selected.	47
FIPS CO	The FIPS CO code is auto-filled when the County is selected.	051
Contact	Name of the contact for the Facility	John Doe
Phone Num	Phone Number	(615)455-9999
Section	USGS Section	15
Township	USGS Township	3E
Range	USGS Range	7W
Latitude	Enter the facility latitude. Four decimal places have been reserved for entry with seconds; use the resolution that is available. Latitude and longitude are also entered for each well.	35° 14' 27.0000
Longitude	Enter the facility longitude. Four decimal places have been reserved for entry with seconds; use the resolution that is available. Longitude are also entered for each well.	86° 2' 37.0000
Lat/Long Method	<p>Enter single method used to determine the latitude and longitude:</p> <p>D = Digitized P = Digitized from USGS Map G = USGS 7.5' Map M = Manual R = Calculated from Section/ Township/Range/Quarter C = Calculated from County Center S = Surveyed A = Obtained from Satellite F = Field Checked¹ T = Calculated from UTM O = Other U = Unknown Z = Guess</p> <p>¹"Field-checked" means measured with a tape measure, then calculated from a known point.</p>	G

Table 3-2. Entries for the ADD A NEW FACILITY and CHANGE A FACILITY dialogs.

Table 3-3 lists all navigation, editing, toggle and exit keys available in the GRITS Database data entry dialogs.

Navigation Keys	
< >, <Ctrl-S>	Character left
< >, <Ctrl-D>	Character right
<Ctrl - >, <Ctrl - A>	Word left
<Ctrl - >, <Ctrl - F>	Word right
< >, <Shift-Tab>, <Ctrl-E>	Previous entry
< >, <Tab>, <Ctrl-X>, <Enter>, <Ctrl-M>	Next entry
Home	First character of entry
End	Last character of entry
<Ctrl-Home>	First character of first entry
Editing Keys	
<Delete>, <Ctrl-G>	Delete character to the right of the current cursor position
<Backspace>, <Ctrl-H>	Delete character to the left of the current cursor position
<Ctrl-T>	Delete word right
<Ctrl-Y>	Delete from current cursor position to the end of the current entry
<Ctrl-U>	Undo. Restores current entry to original value
Toggle Keys	
<Insert>, <Ctrl-V>	Toggle between insert and overstrike
Exit Keys	
<Ctrl-W>, <Page Up>, <Page Down>	Save and exit
<Esc>	Exit without saving
Help Keys	
<F1>	Help on current entry

Table 3-3. Active keys within **GRITS Database** data entry dialogs.

- After you have completed all entries (with, of course the exception of County, FIPS ST and FIPS CO) press **<Page Down>** to save your entries. A pop-up that lists all Counties within the specified state will appear on your screen as shown in Figure 3-12.

Time: 10:03:09 Date: 03/14/97	NAME:ABC Landfill FCID:ABCLANDFILL	G R I T S F1 for HELP!																																											
SELECT A COUNTY																																													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">COUNTY NAME</th> <th style="text-align: left;">STATE ABBR</th> <th style="text-align: left;">FIPS ST</th> <th style="text-align: left;">FIPS CNTY</th> </tr> </thead> <tbody> <tr><td>ANDERSON</td><td>TN</td><td>47</td><td>001</td></tr> <tr><td>BEDFORD</td><td>TN</td><td>47</td><td>003</td></tr> <tr><td>BENTON</td><td>TN</td><td>47</td><td>005</td></tr> <tr><td>BLEDSE</td><td>TN</td><td>47</td><td>007</td></tr> <tr><td>BLOUNT</td><td>TN</td><td>47</td><td>009</td></tr> <tr><td>BRADLEY</td><td>TN</td><td>47</td><td>011</td></tr> <tr><td>CAMPBELL</td><td>TN</td><td>47</td><td>013</td></tr> <tr><td>CANNON</td><td>TN</td><td>47</td><td>015</td></tr> <tr><td>CARROLL</td><td>TN</td><td>47</td><td>017</td></tr> <tr><td>CARTER</td><td>TN</td><td>47</td><td>019</td></tr> </tbody> </table>	COUNTY NAME	STATE ABBR	FIPS ST	FIPS CNTY	ANDERSON	TN	47	001	BEDFORD	TN	47	003	BENTON	TN	47	005	BLEDSE	TN	47	007	BLOUNT	TN	47	009	BRADLEY	TN	47	011	CAMPBELL	TN	47	013	CANNON	TN	47	015	CARROLL	TN	47	017	CARTER	TN	47	019	State: TN ZIP: 37339 County: _____ PS ST: _____ FIPS CO: _____ Phone Num: (615) 455-1234 Latitude: 35°14'27.0000 Longitude: 86°2'37.0000 Method: G
COUNTY NAME	STATE ABBR	FIPS ST	FIPS CNTY																																										
ANDERSON	TN	47	001																																										
BEDFORD	TN	47	003																																										
BENTON	TN	47	005																																										
BLEDSE	TN	47	007																																										
BLOUNT	TN	47	009																																										
BRADLEY	TN	47	011																																										
CAMPBELL	TN	47	013																																										
CANNON	TN	47	015																																										
CARROLL	TN	47	017																																										
CARTER	TN	47	019																																										
Use this option to: Point to a County With Arrow Keys. Hit Return to Select																																													

Figure 3-12. The pop-up list for County, FIPS ST and FIPS CO selection.

4. Use the up and down arrow keys to highlight the desired county. You may also type the letter that the desired county begins with to position the cursor within the list.

Example: The example facility is in Franklin County, Tennessee. Type <F> to jump to the first county in the list that begins with the letter F. The first county in Tennessee that begins with the letter F is Fayette County. After <F> is pressed the entry for Fayette County is highlighted. After pressing the down arrow key twice Franklin County is highlighted.

Once the desired county is highlighted press <Enter>. The County, FIPS ST and FIPS CO entries will be filled from your selection. The complete entry for the XYZ Landfill is shown in Figure 3-13.

Time: 10:03:09 Date: 03/14/97	NAME:ABC Landfill FCID:ABCLANDFILL	G R I T S F1 for HELP!
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ADD A FACILITY		
Site Name: XYZ Facility		
Address: NW Corner of Cline and	State: TN	
: Route 30	ZIP: 37339	
City: Estill Springs	County: FRANKLIN	
FCID: TN0000000002	FIPS ST: 47	FIPS CO: 051
Contact: John Doe	Phone Num: (615) 455-1234	
Section: 15	Latitude: 35°14' 27.0000	
Township: 3E	Longitude: 86° 2' 37.0000	
Range: 7W	Lat/Long Method: G	

Use this option to:
Facility has been Added. Hit a key._

Figure 3-13. Completed entry for the ADD A FACILITY dialog.

Figure 3-14 shows the **GRITS/STAT** database files after adding the XYZ Landfill facility with the Add a New Facility option of the **EDIT FACILITY MENU**. The Add a New Facility option appends a row (or record) to the **FACILITY.DBF** file and fills it with user input. Relational links (the **FACILITY.NTX** file) are also updated.

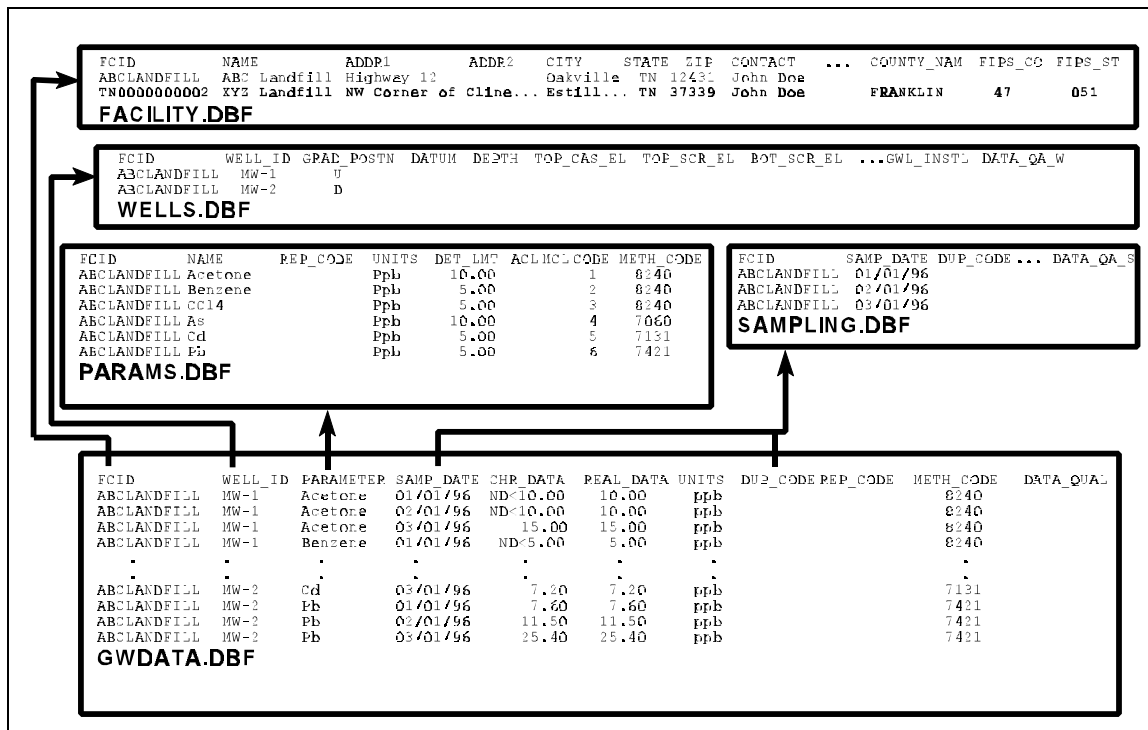


Figure 3-14. GRITS/STAT database files after adding the XYZ Landfill. Note the newly added row (or record) in the FACILITY.DBF file.

5. Press <Enter> to return to the EDIT FACILITY MENU.

Note that the currently selected Facility will automatically be set to the newly added facility.

3.4.1.2 CHANGE FACILITY DATA

The Change Facility Data option of the EDIT FACILITY MENU allows you to change data for an existing facility. To change data for an existing facility follow the steps below.

1. Open the Facility Data Editor in the **GRITS Database** module. (See Section 3.4.1).
2. Press <C> or use the up and down arrow keys to highlight the Change Facility Data option of the EDIT FACILITY MENU and press <Enter>.
3. A pop-up list of facilities in the currently selected data directory appears on your screen as shown in Figure 3-15. Use the up and down arrow keys to highlight the facility that you wish to edit and press <Enter>.

If you need to edit a facility in another data directory press <F2>. A pop-up dialog will appear on your screen and prompt you for a new **Source Path**. Type the legal DOS directory name of the desired data directory and press <Enter>. The pop-up **FACILITY SELECTION MENU** will appear on your screen and list the facilities in the newly selected data directory. Select the facility you wish to edit and press <Enter>.

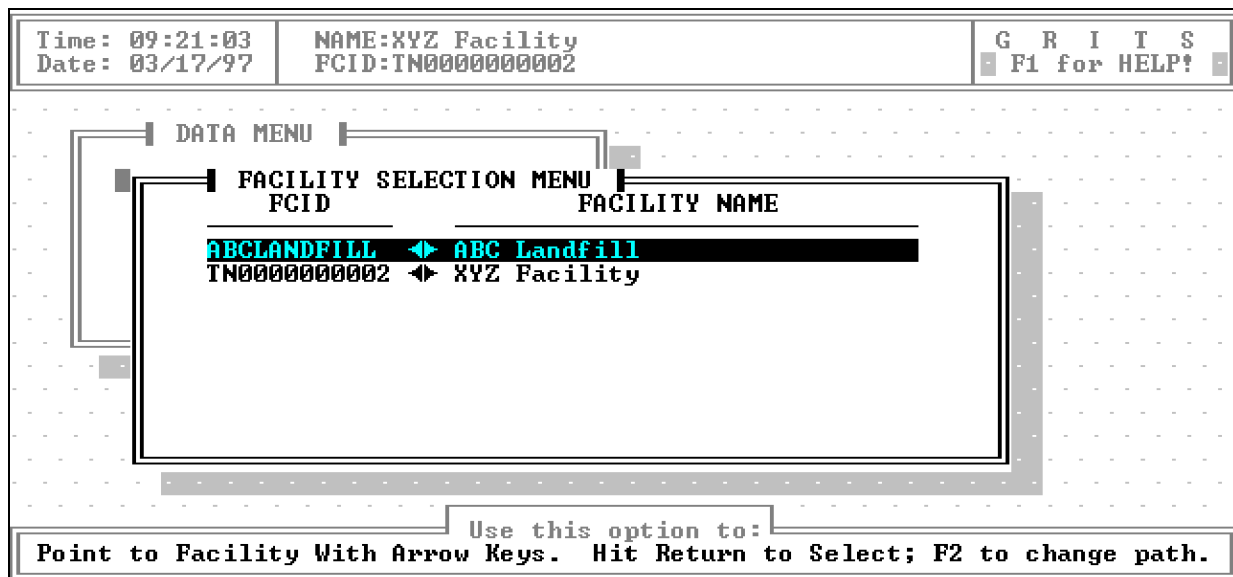


Figure 3-15. The FACILITY SELECTION MENU.

4. The **CHANGE A FACILITY** dialog appears on your screen as shown in Figure 3-16. A prompts appears at the bottom of the screen and asks:

Is this the Facility You Wish to Change? (Y/N) Y

Press the <Y> key to confirm that this is the facility that you wish to edit.

Press the <N> key if this is not the facility that you wish to edit. A message: **Facility Change Aborted**. Hit a key appears at the bottom of your screen. Press the <Enter> key to return to the **EDIT FACILITY MENU**.

Files appears at the bottom of your screen. In the majority of the cases the Related Files FCID Change option should be used. This option updates all FCID fields in the WELLS.DBF, SAMPLING.DBF, PARAMS.DBF and GWDATA.DBF files. If this option is not used the Facility Well list, Parameter list, Sampling events and ground water observations will not be stamped with the new FCID. Since all relations between the **GRITS/STAT** database files are based on the FCID, failure to use the Related Files FCID Change option will orphan the Facility Well List, Parameter List, Sampling events and ground water observations. Press <R> or highlight the Related Files FCID Change option and press <Enter>. Figure 3-18 shows the affect of changing the FCID of ABC Landfill from ABCLANDFILL to TN0000000001 followed by using the Facility File FCID Change and the Related Files FCID Change options of the FCID CHANGE MENU.

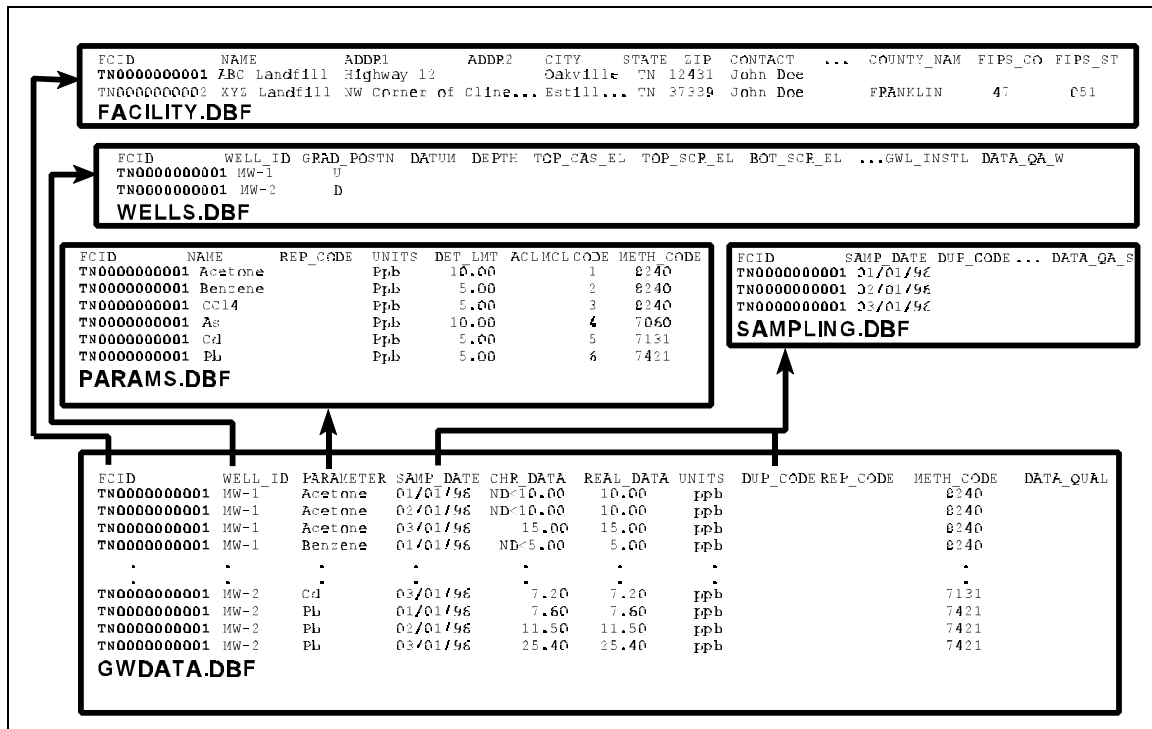


Figure 3-18. **GRITS/STAT** database files after changing the FCID for ABC Landfill from ABCLANDFILL to TN0000000002 followed by executing the Related Files FCID Change option of the FCID CHANGE MENU.

After successful completion of the Related Files FCID Change option a message:

All files have been successfully changed. Hit a key.

will appear at the bottom of your screen. Press the <Enter> key to return to the FCID CHANGE MENU. Press <E> or highlight Exit and press <Enter>.

6. The data entry fields in the CHANGE A FACILITY dialog now become active. Use the keys listed in Table 3-3 to navigate and edit the facility information. For a description of each data entry field see Table 3-2. If you need to change the County press <F2>.

Saving Your Changes

Press <Page Down> to save your changes and exit. A message: Facility Data has been Changed. Hit a key appears at the bottom of your screen. Press <Enter> to return to the EDIT FACILITY MENU.

Abandoning Your Changes

Press <Esc> to abandon your changes.

3.4.1.3 DELETING A FACILITY

The Un/Delete Facility option of the EDIT FACILITY MENU is used to mark and unmark facility datasets for deletion. This option does not physically remove facility datasets from the **GRITS/STAT** database files. The Un/Delete Facility option tags or untags facility datasets for deletion.

Facility datasets are not physically removed from the **GRITS/STAT** database files until the Pack and Index option of the INDEX MENU of the **GRITS Utilities** module is executed. The Pack and Index option physically removes all records marked for deletion from the **GRITS/STAT** database files.

To mark a facility for deletion follow the steps below.

1. Open the Facility Data Editor in the **GRITS Database** module (See Section 3.4.1).
2. Press <U> or use the up and down arrow keys to highlight the Un/Delete Facility option of the EDIT FACILITY MENU and press <Enter>.
3. The FACILITY SELECTION MENU appears on your screen as shown in Figure 3-19. Use the up and down arrow keys to select the facility that you want to mark or unmark for deletion and press <Enter>.

If you need to delete a facility in another data directory press <F2>. A pop-up

dialog will appear on your screen and prompt you for a new **Source Path**. Type the legal DOS directory name of the desired data directory and press **<Enter>**. The pop-up **FACILITY SELECTION MENU** will appear on your screen and list the facilities in the newly selected data directory. Select the facility you wish to mark for deletion and press **<Enter>**.

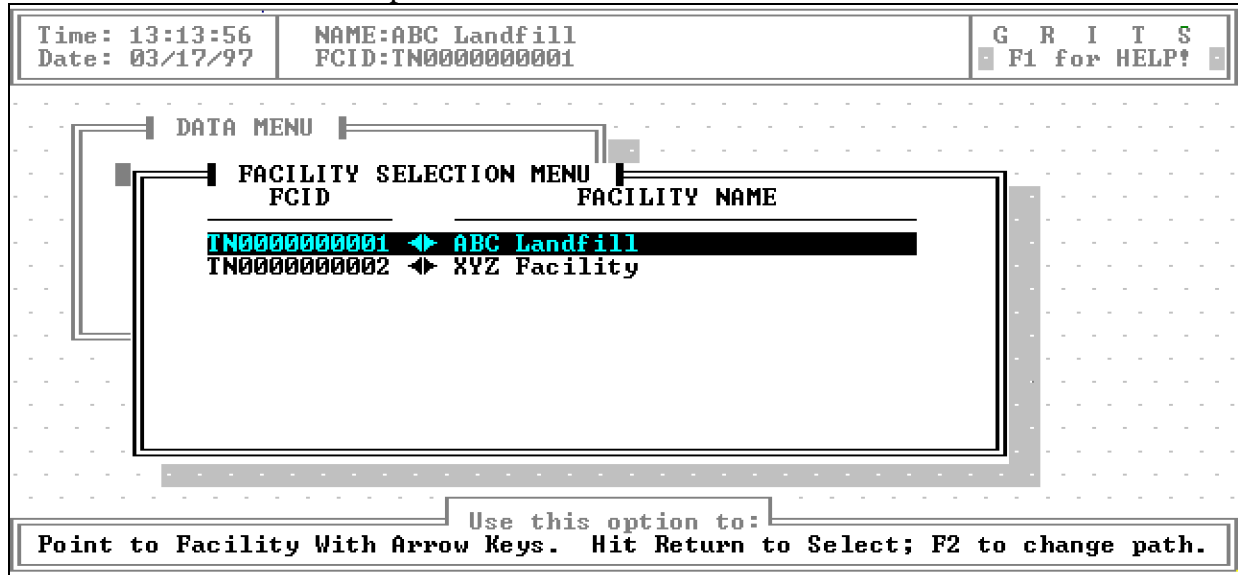


Figure 3-19. The FACILITY SELECTION MENU.

4. The DELETE A FACILITY dialog appears (Figure 3-20) accompanied with a prompt at the bottom of your screen:

Is this the Facility You Wish to Delete? (Y/N)

Type **<N>** if you do not want to delete this facility.

If the Facility File FCID Recall option is executed the deletion mark will be removed from the currently selected facility and the Facility File FCID Recall option will change to Facility File FCID Delete.

- Press <R> or highlight the Related Files FCID Delete option and press <Enter>. The Well list, Sampling Event List, Parameter List and ground water observations for the selected facility are marked for deletion and the Related Files FCID Delete option changes to Related Files FCID Recall.

If the Related Files FCID Recall option is executed all deletion marks will be cleared from the Well List, Sampling Event List, Parameter list and ground water observations for the selected facility and the Related Files FCID Recall option will change to Related Files FCID Delete.

Figure 3-22 shows the **GRITS/STAT** database files after the Facility File FCID Delete and Related Files FCID Delete options are executed from the DELETION MENU for the ABC Landfill.

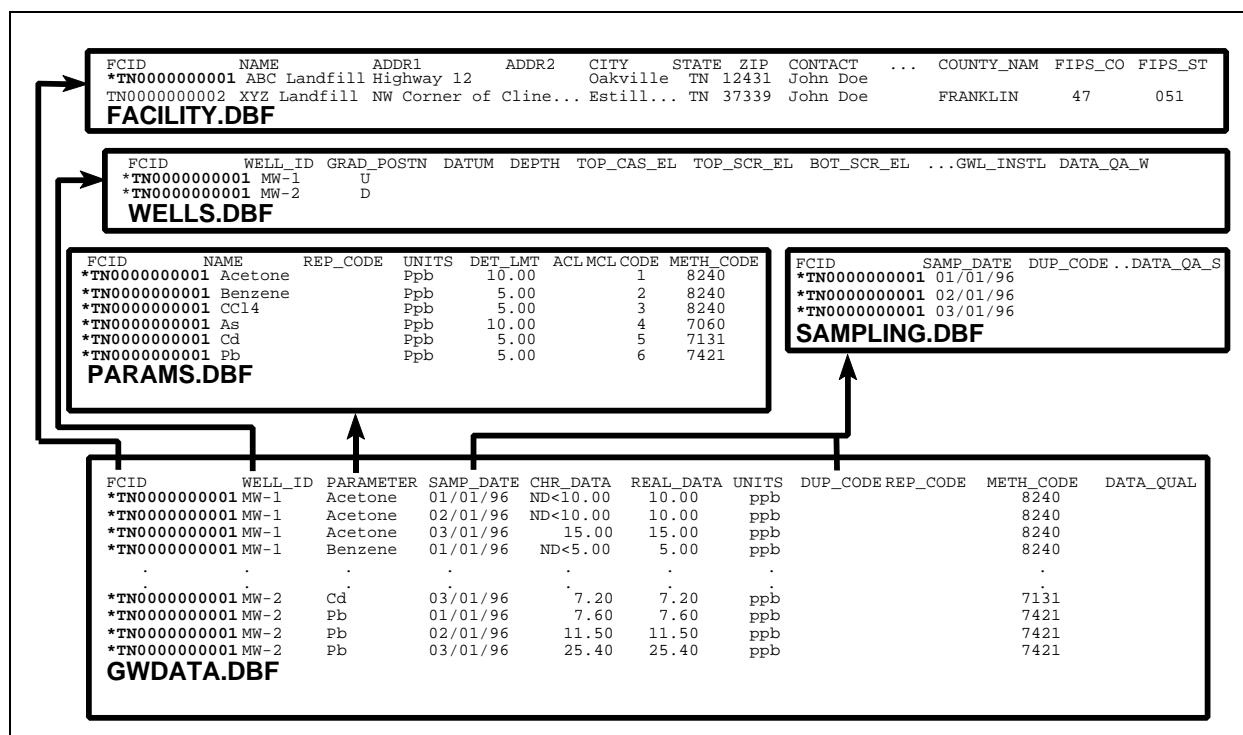


Figure 3-22. **GRITS/STAT** database files after executing the Facility File FCID Delete and the Related Files FCID Delete options of the DELETION MENU. Rows preceded with an asterisk are marked for deletion.

7. Facility datasets marked for deletion are removed by executing the Pack and Index option of the INDEX MENU of the **GRITS Utilities** module. Prior to executing the Pack and Index option, deletion marks may be removed by executing the Facility File FCID Recall and the Related Files FCID Recall options of the DELETION MENU. After the Pack and Index option is executed all data marked for deletion is physically removed from the **GRITS/STAT** databases and cannot be recovered. Figure 3-23 shows the GRITS/STAT databases after the ABC Landfill dataset is marked for deletion (see Figure 3-22) and the Pack and Index option is executed from the INDEX MENU in the **GRITS Utilities** module.

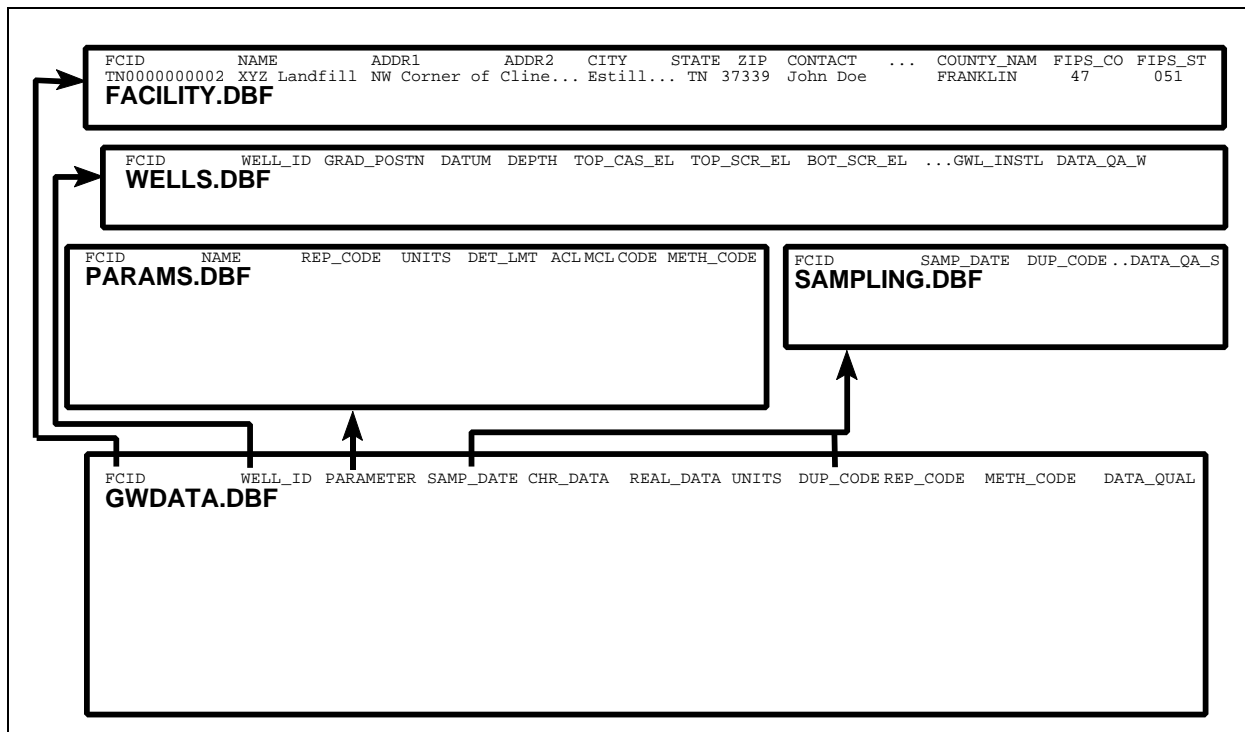


Figure 3-23. **GRITS/STAT** database files after executing the Pack and Index option of the INDEX MENU of **GRITS Utilities** on the dataset marked for deletion in Figure 3-22.

3.4.2 WELL FILE DATA EDITOR

The Well File Data Editor is used to add, edit and delete wells for the currently selected facility. To access the Well File Data Editor follow the steps below:

1. Start the **GRITS Database** module (See Section 3.2).
2. Press the <F> key or use the up and down arrow keys to highlight the File Data

Entry Menu of the DATA MENU and press <Enter>. The FILE DATA ENTRY menu (Figure 3-8) appears on your screen.

3. Press the <W> key or use the up and down arrow keys to highlight the Well File Data Editor option of the FILE DATA ENTRY menu and press <Enter>. The EDIT WELLS MENU appears on your screen as shown in Figure 3-24.

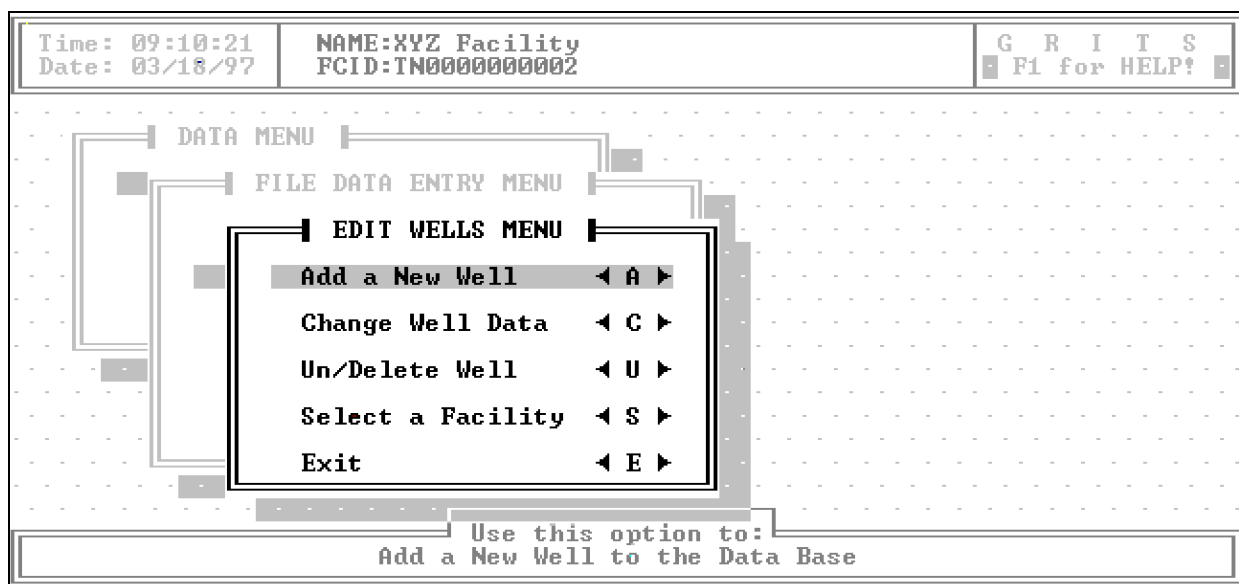


Figure 3-24. The EDIT WELLS MENU.

3.4.2.1 ADD A NEW WELL

The Add a New Well option of the EDIT WELLS MENU is used to add a new well to the currently selected facility. To add a new well to the currently selected facility follow the steps below.

1. Get to the EDIT WELLS MENU (See Section 3.4.2).
2. Press the <A> key or use the up and down arrow keys to highlight the Add a New Well option and press the <Enter> key. The prompt shown in Figure 3-25 appears on your screen.

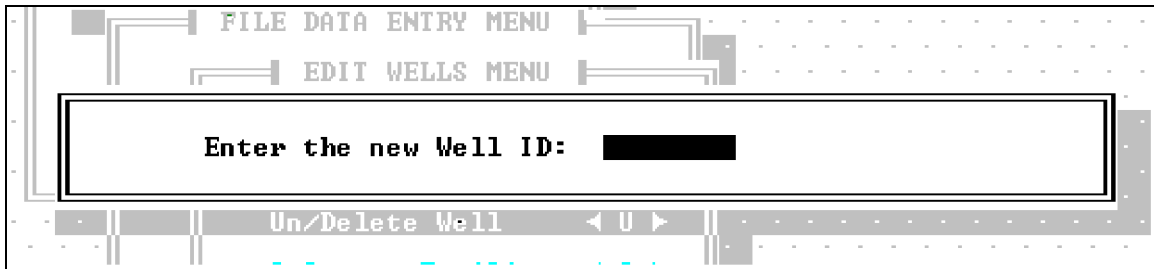


Figure 3-25. Prompt for new Well ID.

3. Type the Well ID of the new well and press <Enter>.

The Well ID is a unique identifier for a well at the currently selected facility. No two wells at a given facility should have the same Well ID.

Example: A new background well: MW-01 is to be added to the XYZ Landfill dataset. At the Enter the new Well ID prompt (Figure 3-25) type:

MW-01 <Enter>

Note that there should only be one well at XYZ Landfill with a Well ID of MW-01.

The ADD A WELL dialog shown in Figure 3-26 appears on your screen.

Time: 10:10:55		NAME: XYZ Facility		G R I T S	
Date: 03/18/97		FCID: TN0000000002		F1 for HELP!	
ADD A WELL			Well Name: MW-01		
Date Installed Well Datum Well Depth Casing Material Pipe Diameter Well Log Type Well Use Code Well QA Code Well Gradient ackground <C>ompliance <O>ther <U>nknown		Top of Casing Elev Top of Screen Elev Bottom of Screen Elev Surface Elevation Depth at Installation GWL at Installation X Coordinate Y Coordinate Latitude Longitude Lat/Long Method Elevation Method			
Comment:		0.0000 0.0000 0.0000 0.0000 0.0000			
Use this option to: ↑ Enter New Well Data Above ↑					

Figure 3-26. The ADD A WELL dialog.

4. Complete the entries in the ADD A WELL dialog. Use the up and down arrow keys to navigate between entries. Press <Page Down> to save your entries when you are finished.

Table 3-4 describes each entry in the ADD A WELL dialog. Note that you can also press <F1> at each entry for context sensitive help.

See Table 3-3 for additional navigation, editing , toggle and exit keys.

ADD A WELL dialog entry	Description	Example
Date Installed	Enter the date that the well was installed (if available).	01/16/80
Well Datum	Enter the reference surface level for elevation data. The North American Vertical Datum (NAVD) of 1988 is recommended by HQ. Mean Sea Level (MSL) is also acceptable. Local surface levels should be used as a last resort.	NAVD
Well Depth	Enter the total well depth measured from the ground surface. IF THE WELL DEPTH IS TRACKED AND CHANGES OVER TIME (e.g., due to siltation), RECORD THE WELL DEPTH AS A Ground water PARAMETER AND TREAT DEPTH AS A SAMPLING RESULT.	16.5 feet
Casing Material	Enter the casing material of the inner well casing. The well water is in contact with this surface. Typical casing materials include: ABS, CS (carbon steel) CTFE (chlorotrifluoroethylene), FEP (flouro ethylene propylene), FRE (fiberglass-reinf. epoxy), FRP fiberglass-reinf. plastic), GS (galvanized steel), LCS (low carbon steel), PFA (perfluoroalkoxy), PTFE (polytetrafluoroethylene), PVC-J (joined), PVC-G (glued), PVC Plastic, PVDF (polyvinylidene fluoride), SS (stainless steel), Teflon TFE (tetrafluoroethylene), Other	PVC

Pipe Diameter	Record the interior diameter of the well casing. Units are typically inches, but record the units as well if space permits.	4"
Well Log Type	<p>The code that best describes the log type that is available for the site. These codes are defined by the EPA Office of Ground-Water Protection: (see "Definitions for the Minimum Set of Data Elements for Ground-Water Quality, USEPA/OGWDW, July 1991).</p> <p><u>Lithologic Logs:</u> D= Core - record of strata through which borehole passes F = DRILLERS - gross characteristics of strata G = Drilling time - ft by ft record of penetration rate M = Geologist - graphic record of strata by microscopic exam</p> <p><u>Electric Logs:</u> E = Dipmeter - angle of formation dip H = Electric - electrical potentials in borehole I = Fluid Conductivity - conductivity of water L = Lateral - subsurface strata resistance N = Induction - strata conductivity P = Microlateral - hi-res microlog Q = Microlog - rock resistivity next to borehole</p> <p><u>Visual Logs</u> V = Video - videocamera lowered through borehole</p> <p><u>Radioactivity Logs</u> K = Gamma-gamma - gamma ray scatter R = Neutron - radiation intensity after neutron bombardment S = Tracer</p> <p><u>Acoustic Logs</u> T = Sonic - porosity/lithology by sound</p> <p><u>Special Logs</u> A = Caliper - diameter of uncased borehole B = Casing Collar - locates casing collars, screens, etc. C = Casing Inspection - steel casing thickness J = Fluid Velocity - rate & direction of fluid velocity U = Temperature - temperature v. depth W = Other</p>	F

Well Use Code	<p>Enter the code which describes the principal use for this well. These codes are defined by the EPA Office of Ground-Water Protection. (see "Definitions for the Minimum Set of Data Elements for Ground-Water Quality, USEPA/OGWDW, July 1991).</p> <p><u>Water Extraction (Water Supply)</u> 1A = public water supply 1B = private well 1C = extraction & treatment 1C = extraction & treatment 1D = industrial supply 1E = irrigation 1F = dewatering 1G = other water use <u>Spring (Natural Discharge)</u> 11 = spring <u>Mineral mining</u> 02 = repressurize (oil well) 05 = seismic monitoring 07 = mine tunnel, shaft, etc. 09 = oil or gas source 12 = test hole (uncased) <u>Observation</u> 8A = RCRA monitoring, compliance, etc. 8B = Piezometer 8C = Other ground water observation <u>Water Injection</u> 03 = drain for surface water 10 = recharge aquifer 13 = tracer test (injection) 15 = liquid waste disposal <u>Heat Exchange</u> 04 = geothermal well 06 = heat reservoir (closed system) <u>Electrical Grounding</u> 14 = anode for grounding pipelines, etc. <u>Other</u> 13 = Unused 16 = Other</p>	08
---------------	--	----

Well QA Code	<p>The entry in these fields is combined with the sampling date confidence indicator (see sampling date entry screen) to create the SAMPLE / ANALYSIS CONFIDENCE FACTOR. These codes have been defined by the EPA Office of Ground-Water Protection. (see "Definitions for the Minimum Set of Data Elements for Ground-Water Quality, USEPA/OGWDW, July 1991). Blanks indicate status is unknown. Enter the well quality code (A,B,C)</p> <p>A = Station has been inspected in the last (5) years and sampling station meets study objectives.</p> <p>B = As reported by a consultant, station has been properly drilled, constructed of inert materials, properly developed, and has tamper controls. Station has been constructed in accordance with guidance produced by the regulating agency (e.g., 40 CFR 265 Subpart F).</p> <p>C = Station is known to be inadequate in some manner</p>	B
Well Gradient Code	<p>Enter the well position in terms of the local ground water gradient:</p> <p> Background <C> Compliance <O> Other <U> Unknown</p> <p>To be upgradient, a well must be far enough from the unit so as not to be contaminated by the unit.</p> <p>You must enter one of these choices to continue.</p>	B

Top of Casing Elev	Enter the top of casing elevation referenced to DATUM (the top of the exterior well casing. For example, if datum is MSL, enter feet MSL. Elevation may be entered in meters or exterior well casing. For example, if datum is MSL, enter feet MSL. Elevation may be entered in meters or feet. For example, if boring log indicates top of casing at 938.6 feet MSL, record this as <938.6> and make sure datum is listed as MSL.	45.96'
Top of Screen Elev	Enter the top of screen elevation referenced to DATUM. For example, if datum is MSL, enter feet MSL. Elevation may be entered in meters or feet. For example, if boring log indicates top of screen at 918.2 feet MSL, record this as <918.2> and make sure datum is listed as MSL.	35.52'
Bottom of Screen Elev	Enter the bottom of screen elevation referenced to DATUM. For example, if datum is MSL, enter feet MSL. Elevation may be entered in meters or feet. For example, if boring log indicates bottom of screen at 908.2 feet MSL, record this as <908.2> and make sure datum is listed as MSL.	26.52'
Surface Elevation	Enter the ground surface elevation referenced to DATUM at the well pipe. For example, if datum is MSL, enter feet MSL. Elevation may be entered in meters or feet. For example, if boring log indicates surface at 935 feet MSL, record this as <935> and make sure datum is listed as MSL.	43.02'
Depth at Installation	Enter the well depth at installation. This is the "as-built" depth. Depth may be entered in meters or feet. Record units.	16.5'
GWL at Installation	Enter the ground water level referenced to the datum at well installation after it has stabilized if available. Attach units (e.g., <'> for feet) to the measurement. Typically, GWL is measured in feet MSL (Mean Sea Level)	5.0'
X Coordinate, YCoordinate	Enter the X and Y coordinates required for modeling. NO SPACES OR CHARACTERS PERMITTED	-1259 (for 1259 S)

Latitude, Longitude	Enter the well latitude and longitude. Four decimal places have been reserved for entry with seconds; use the resolution that is available.	35°14'27.0000, 86°2'37.0000
Lat/Long Method	<p>Enter single method used to determine the latitude and longitude:</p> <p>D = Digitized P = Digitized from USGS Map G = USGS 7.5' Map M = Manual R = Calculated from Section/Township/Range/Quarter C = Calculated from County Center S = Surveyed A = Obtained from Satellite F = Field Checked¹ T = Calculated from UTM O = Other U = Unknown Z = Guess</p> <p>¹"Field-checked" means measured with a tape measure, then calculated from a known point.</p>	Z
Elevation Method	<p>Enter the method used to determine elevation. The EPA Office of Ground-Water Protection has defined a series of codes to use as necessary (see "Definitions for the Minimum Set of Data Elements for Ground-Water Quality, USEPA/OGWDW, July 1991):</p> <p>A = Surveyed using differential mode Global Positioning System (GPS) B = Surveyed using absolute mode GPS C = Surveyed from a benchmark using conventional survey methods D = Digitally interpolated from map or photo E = Manually interpolated from a map or photo</p>	
Comment	Enter a free format comment. Use the comment entry to record any information that does not already have an entry field in the well dialog.	Installed by ACME Drilling Co.

Table 3-4. Entries for the ADD A WELL and CHANGE A WELL dialogs.

5. Press the <Page Down> key to save the entries in the ADD A WELL dialog. A message: "Well has been Added. Hit a key." appears at the bottom of your screen. Press the <Enter> key to return to the EDIT WELLS MENU.

If you do not want to add the well press the <Esc> key.

Figure 3-27 shows a new well added to the XYZ Landfill.

Time: 10:10:55		NAME:XYZ Facility		G R I T S	
Date: 03/18/97		FCID:TN0000000002		F1 for HELP!	
ADD A WELL		Well Name: MW-01			
Date Installed	01/16/80	Top of Casing Elev	45.96'		
Well Datum	NAVD	Top of Screen Elev	35.52'		
Well Depth	16.5 feet	Bottom of Screen Elev	26.52'		
Casing Material	PVC	Surface Elevation	43.02'		
Pipe Diameter	4	Depth at Installation	16.5'		
Well Log Type	F	GWL at Installation	5.0'		
Well Use Code	08				
Well QA Code	B	X Coordinate	-1259.0000		
Well Gradient	U	Y Coordinate	0.0000		
ackground		Latitude	0° 0' 0.0000		
<C>ompliance		Longitude	0° 0' 0.0000		
<O>ther		Lat/Long Method			
<U>nknown		Elevation Method			
Comment: Installed by ACME Drilling					
Use this option to:					
Well has been Added. Hit a key._					

Figure 3-27. A newly completed ADD A WELL dialog.

Figure 3-28 shows the GRITS/STAT databases after Wells MW-1, MW-2 and MW-7 were added to the XYZ Facility.

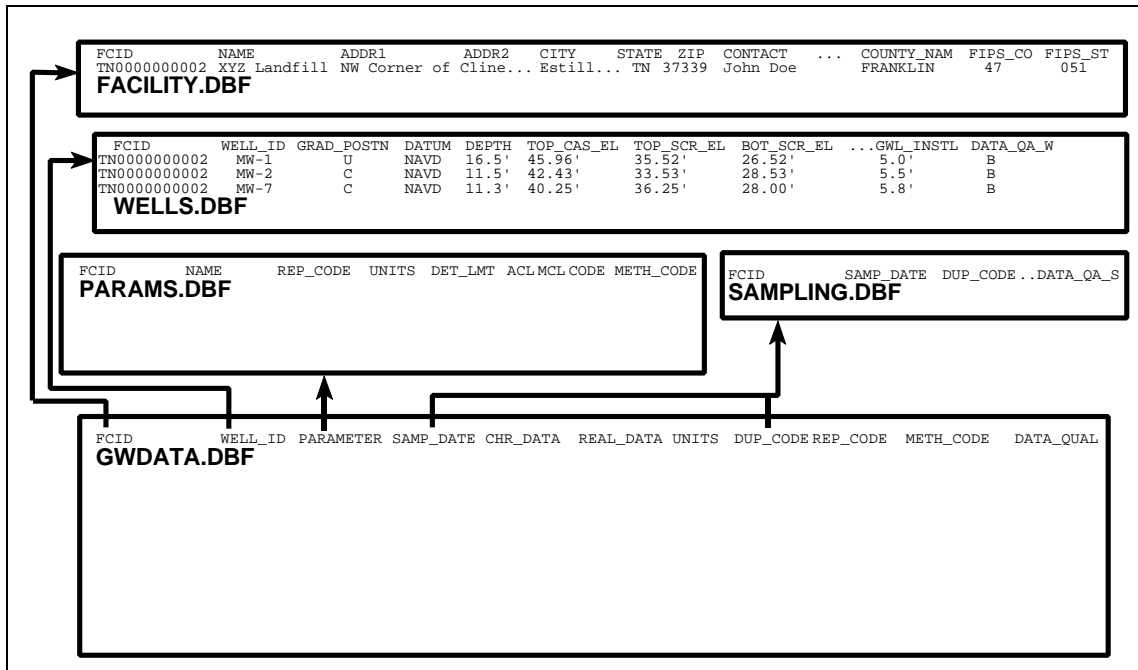


Figure 3-28. GRITS/STAT database files after wells MW-1, MW-2 and MW-3 were added to the XYZ Landfill using the Add a New Well option of the EDIT WELLS MENU. Note the newly added rows in **WELLS.DBF**.

3.4.2.2 CHANGE WELL DATA

The Change Well Data option of the EDIT WELLS MENU is used to modify data for an existing well. To access the Change Well Data option of the EDIT WELLS MENU follow the steps below.

1. Get to the EDIT WELLS MENU (See Section 3.4.2).
2. Press the <C> key or use the up and down arrow keys to highlight the Change Well Data option of the EDIT WELLS MENU and press <Enter>. A pop-up list of wells for the currently selected facility appears on your screen as shown in Figure 3-29.

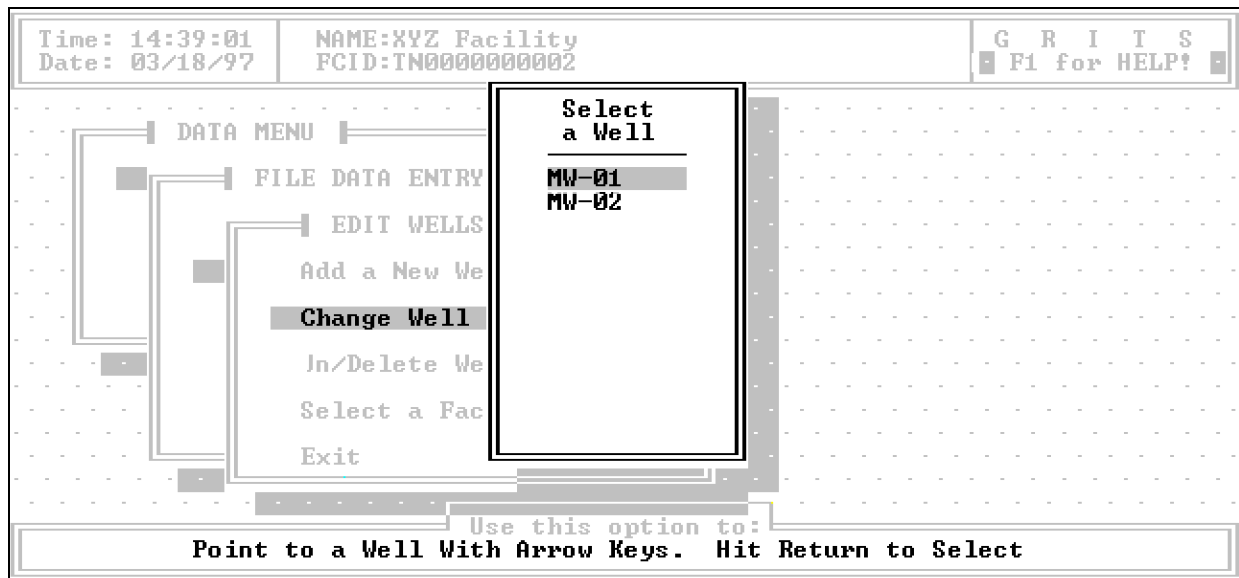


Figure 3-29. Pop-up list of wells for XYZ Landfill.

3. Use the up and down arrow keys to highlight the well that you want to edit and press **<Enter>**. The **CHANGE A WELL** dialog as shown in Figure 3-30 appears on your screen.

Figure 3-30. The **CHANGE A WELL** dialog.

4. A prompt appears at the bottom of your screen:

Is this the Well You Wish to Change? (Y/N)

Press <N> if you do not want to edit this well. The footer message at the bottom of the screen will change to “Well Change Aborted. Hit a key.”. Press the <Enter> key to return to the EDIT WELLS MENU.

Press <Y> if you wish to edit this well.

5. A prompt appears at the bottom of the screen:

Do you wish to change the Well ID? (Y/N)

If you do not wish to change the Well ID press <N>.

Changing the Well ID

If you do need to change the Well ID press <Y>. The WELL CHANGE MENU appears on your screen and prompts for the new Well ID as shown in Figure 3-31.

CID:TN000000000002
WELL | Well Name: MW-01
01/16/80 Top of Casing Elev 45.
NAUD Top of Screen Elev 35.
26.
43.
16.
5.0
9.00
0.00
0'
0'
Lat/Long Method
Elevation Method

Figure 3-31. The WELL CHANGE MENU prompting for a new Well ID.

Type the new Well ID and press <Enter>.

The WELL CHANGE MENU now offers the menu shown in Figure 3-32. Press the <W> key to execute the Well File Change option of the WELL CHANGE MENU.

Press the <G> key to execute the GW DATA File Change option of the WELL CHANGE MENU.

Note that since each ground water observation in the GWDATA.DBF file is stamped with the Well ID of the well from which the observation was taken,

it is necessary to update the GWDATA.DBF file with the GWDATA File Change option to prevent existing ground water observations from being lost.

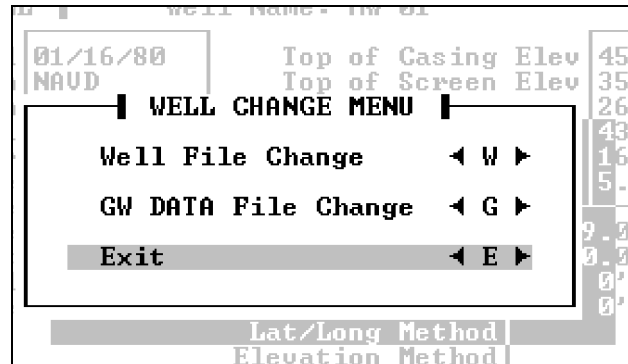


Figure 3-32. The WELL CHANGE MENU after the new Well ID is entered.

Press <E> to exit the WELL CHANGE MENU.

6. The edit fields in the CHANGE A WELL dialog now become active. Use the keys in Table 3-3 to navigate and edit the entries in the CHANGE A WELL dialog.

Use Table 3-4 for help with the entries in the CHANGE A WELL dialog or press <F1> for help on the entry your cursor is presently in.

Saving Your Changes

Press <Page Down> to save your changes. The footer message at the bottom of the screen says: "Well Data has been Changed. Hit a key.". Press <Enter> to return to the EDIT WELLS MENU.

Abandoning Your Changes

Press <Esc> to abandon your changes.

3.4.2.3 DELETING A WELL

The Un/Delete Wells option of the EDIT WELLS MENU toggles deletion marks on or off for user-specified wells. Wells marked for deletion are physically removed by executing the Pack & Index option of the INDEX MENU in the **GRITS Utilities** module. To delete a well follow the steps below.

1. Open the Well File Data Editor in the **GRITS Database** module (See Section 3.4.2).
2. Press the <U> key or use the up and down arrow keys to highlight the Un/Delete Well option of the EDIT WELLS MENU.

3. A pop-up list of wells for the currently selected facility appears as shown in Figure 3-33. Use the up and down arrow keys to highlight the well that you wish to mark for deletion (or unmark) and press **<Enter>**.

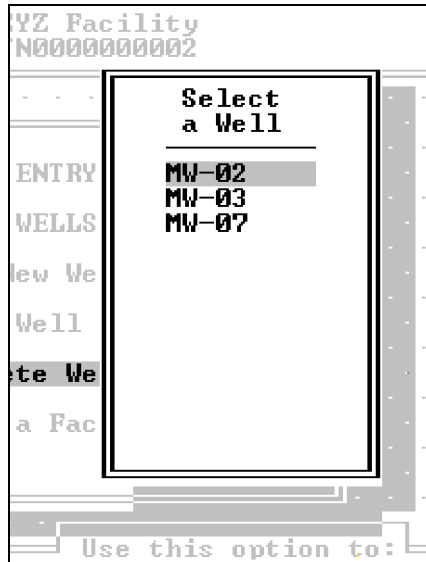


Figure 3-33. The **Select a Well** menu allows you to choose a well to toggle the deletion mark for,

4. The **DELETE A WELL** dialog appears on your screen as shown in Figure 3-34. You are prompted: “Is this the Well You Wish to Delete? (Y/N)”.

Type **<N>** if you do not want to toggle the deletion mark for this well. The footer message will change to “Well Deletion/Restoration Aborted. Hit a key.”. Press **<Enter>** to return to the **EDIT WELLS MENU**.

Type **<Y>** if you do want to toggle the deletion mark for this well.

Time: 13:14:28		NAME:XYZ Facility		G R I T S	
Date: 03/19/97		FCID:TN0000000002		F1 for HELP!	
DELETE A WELL				Well Name: MW-07	
Date Installed 08/17/89		Top of Casing Elev 40.25			
Well Datum NAUD		Top of Screen Elev 36.25			
Well Depth 11' 3"		Bottom of Screen Elev 28			
Casing Material PUC		Surface Elevation			
Pipe Diameter 4"		Depth at Installation 11'3"			
Well Log Type F		GWL at Installation 5'8"			
Well Use Code 08		X Coordinate 0.0000			
Well QA Code B		Y Coordinate 0.0000			
Well Gradient C		Latitude 0° 0' 0.0000			
ackground		Longitude 0° 0' 0.0000			
<C>ompliance		Lat/Long Method			
<O>ther		Elevation Method			
<U>nknown					
Comment:Installed by ACME Drilling. Co.					
Use this option to:					
Is this the Well You Wish to Delete? <Y/N> N					

Figure 3-34. The DELETE A WELL dialog allows you to review the well before toggling the wells deletion flag.

- The DELETION MENU appears as shown in Figure 3-35.

Press <W> to execute the Well File Delete option of the DELETION MENU. The wells deletion mark is toggled on and the Well File Delete option changes to Well File Recall.

Press <G> to execute the GW DATA File Delete option. All ground water observations from the selected well are marked for deletion.

um	NAUD	Top of Screen Elev	36.25
oth	11' 3"	Bottom of Screen Elev	28
al			
cer			11'3"
ode			5'8"
ode			0.0000
ent			0.0000
nd			0' 0.
ce			0' 0.
DELETION MENU			
Well File Recall		< W >	
GW DATA File Delete		< G >	
Exit		< E >	
Lat/Long Method			
Elevation Method			

Figure 3-35. The DELETION MENU.

- Execute the Pack & Index option of the INDEX MENU in the **GRITS Utilities** module to permanently remove all wells marked for deletion and associated ground water observations.

Figure 3-36 illustrates the affects of the Well File Delete and the GW DATA File Delete options of the DELETION MENU applied to Well: MW-2. The Well File Delete option toggled the deletion mark on for Well MW-2 in WELLS.DBF. The GW DATA File Delete option toggled the deletion marks on for all ground water observations taken from Well MW-2 in GWDATA.DBF.

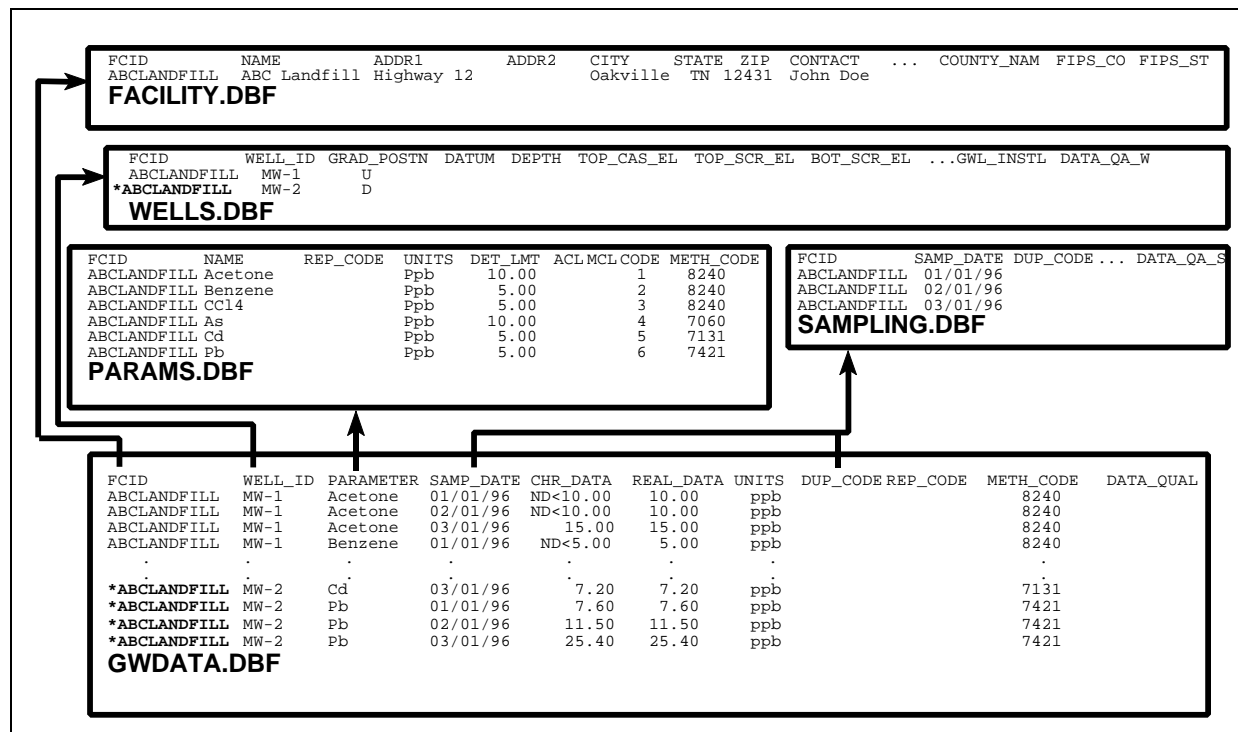


Figure 3-36. GRIT/STAT database files with Well MW-2 and associated ground water observations marked for deletion. Rows preceded with an asterisk are marked for deletion.

If applied to the files of Figure 3-36 the Well File Recall option would remove the deletion marks from WELLS.DBF and the GW DATA File Recall option would remove deletion marks from GWDATA.DBF.

Figure 3-37 shows the GRITS/STAT database files after Pack & Index option of the INDEX MENU in the **GRITS Utilities** is executed. Note that when **GRITS/STAT** database files are packed data marked for deletion are permanently removed and cannot be recovered.

Note: In most cases you should always execute the Well File Delete/Recall option *and* the GW DATA File Delete/Recall option. If the well alone is deleted the associated ground water observations will be orphaned in GWDATA.DBF (i.e., have no parent Well information in WELLS.DBF). If a new well is added at a later time with the same Well ID as the deleted well it would inherit the orphaned ground water observations (i.e., ground water observations would automatically appear for the newly added well).

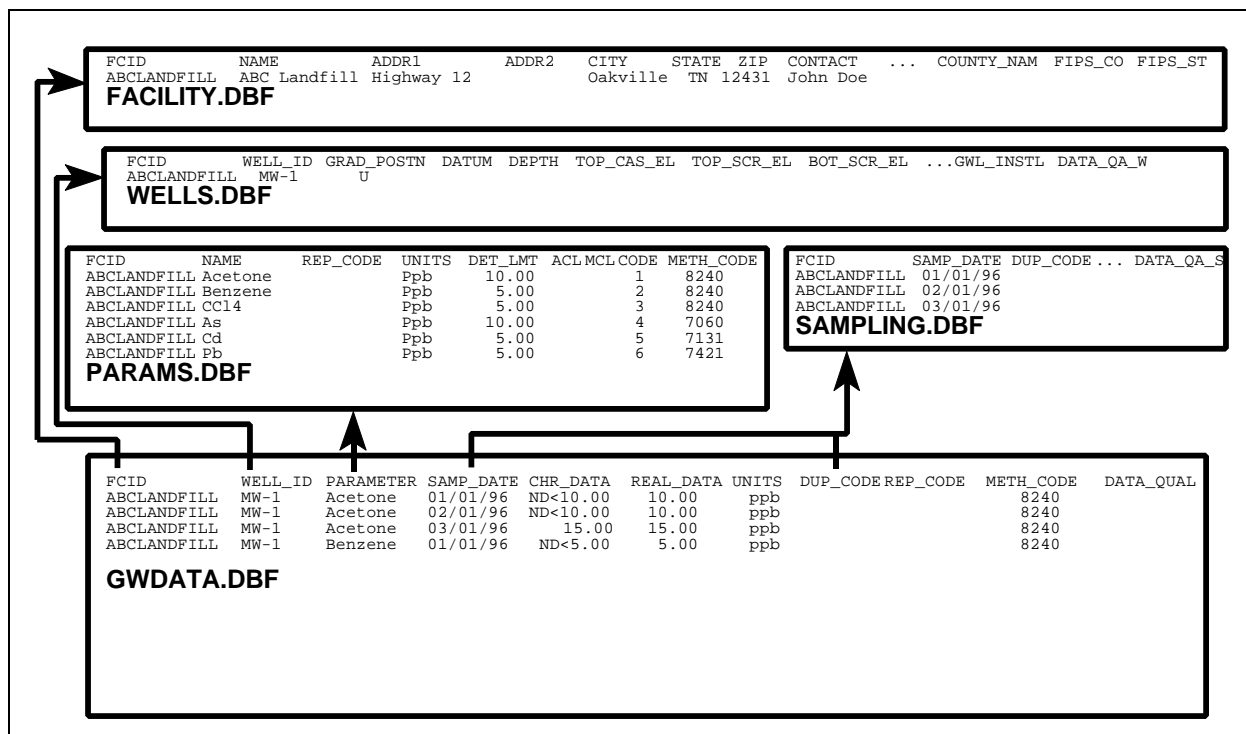


Figure 3-37. GRIT/STAT database files of Figure 3-36 after being packed in the GRITS Utilities module. All rows previously marked for deletion have been removed.

3.4.3 PARAMETER DATA EDITOR

The Parameter Data Editor is used to add, modify and delete ground water monitoring parameters for the currently selected facility. To access the Parameter Data Editor follow the steps below.

1. Start the **GRITS Database** module (See Section 3.2).
2. Press the <F> key or use the up and down arrow keys to highlight the File Data Entry Menu of the DATA MENU and press <Enter>. The FILE DATA ENTRY menu (Figure 3-8) will appear on your screen.
3. Press the <P> key or use the up and down arrow keys to highlight the Parameter Data Editor of the FILE DATA ENTRY menu and press <Enter>. After a brief countdown the EDIT PARAMETERS MENU shown in Figure 3-38 appears on your screen.

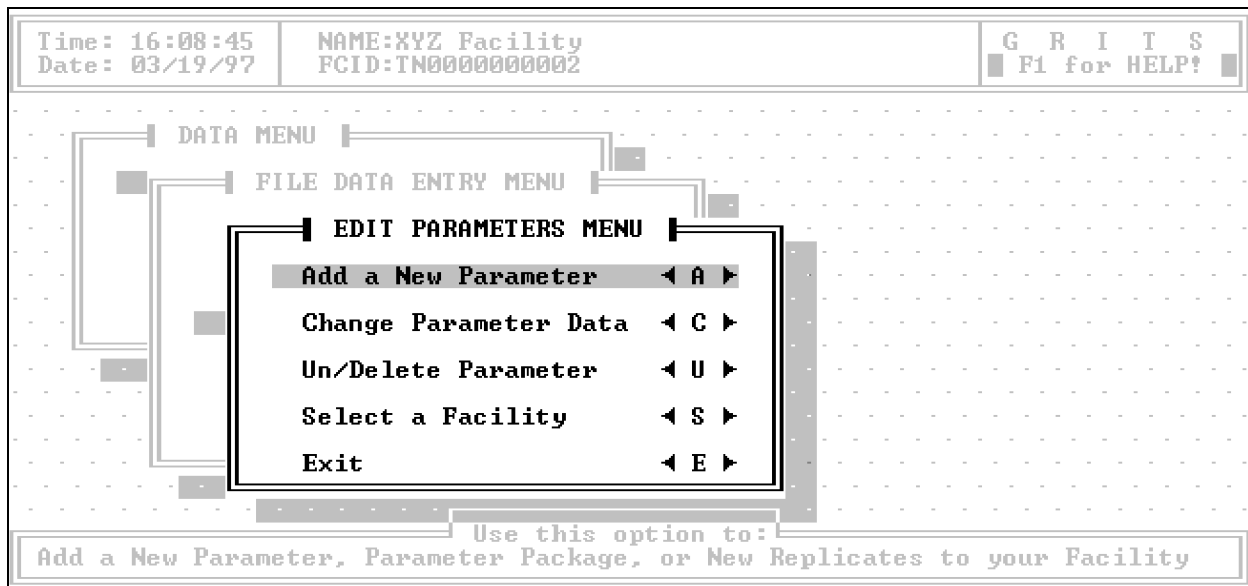


Figure 3-38. The EDIT PARAMETERS MENU.

3.4.3.1 ADD A NEW PARAMETER

The Add a New Parameter option of the EDIT PARAMETERS MENU is used to add a parameter to the currently selected facility or add a new parameter to the **Master Parameter List**.

The **Master Parameter List** is a database of parameters used to validate parameter adds and edits. This enforces consistency and prevents different parameter codes from being entered for the same parameter.

Press the <A> key or use the up and down arrow keys to highlight the Add a New Parameter option of the EDIT PARAMETERS MENU and press <Enter>. The ADD PARAM MENU shown in Figure 3-39 appears on your screen. The ADD PARAM MENU offers two choices for adding parameters to the currently selected facility.

The From Master List option of the ADD PARAM MENU is used to add a single parameter to the currently selected facility.

The Package Menu option is used to add a group of parameters to the facility parameter list.

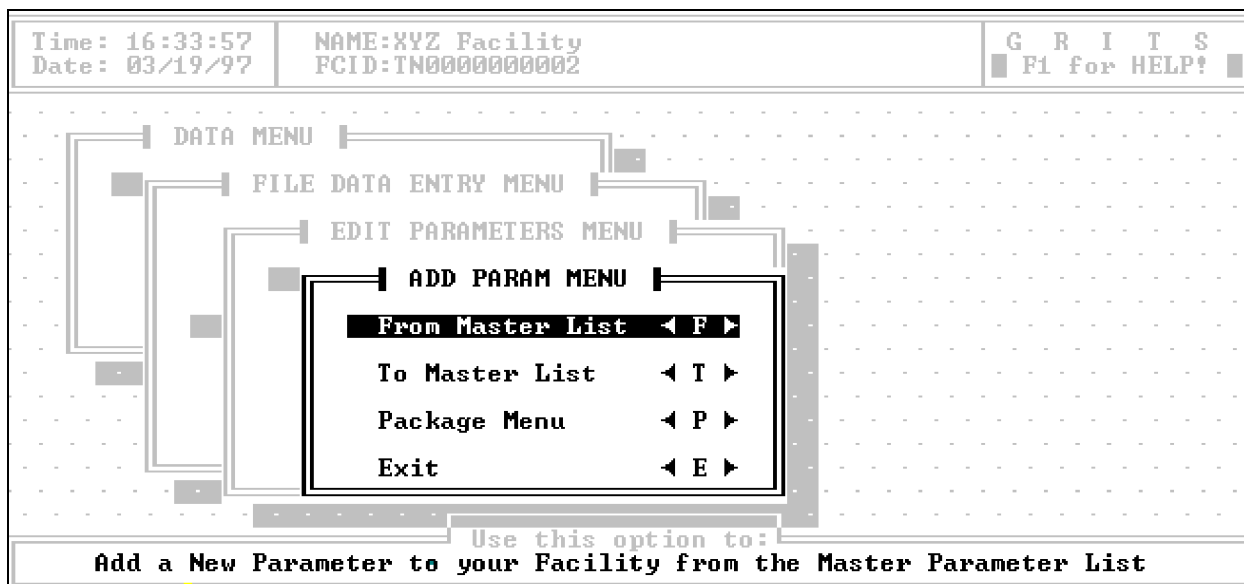


Figure 3-39. The ADD PARAM MENU.

Adding a single parameter From the Master List

Use the From Master List option of the ADD PARAM MENU to add a single parameter to the currently selected facility. Follow the steps below to add a single parameter.

1. Get to the ADD PARAM MENU (See Section 3.4.3.1).
2. Press <F> or use the up and down arrow keys and highlight the From Master List option of the ADD PARAM MENU and press <Enter>. The PARAMETER MASTER LIST as shown in Figure 3-40 appears on your screen.
3. Use the up arrow < >, down arrow < >, <Page Up> and <Page Down> keys to highlight the desired parameter and press <Enter>.

Note that you may also type the letter that the desired parameter begins with.

Example: To highlight Benzene press to jump to the first parameter in the list that begins with the letter B. Press <Page Down>. Repeatedly press the down arrow key < > until Benzene is highlighted.

4. The ADD A PARAMETER dialog appears on your screen as shown in Figure 3-41. Complete the entries in the ADD A PARAMETER dialog. Use the up and down arrow keys to navigate between entries. Press <Page Down> to save your entries when you are finished.

